

# PATENT ABSTRACTS OF JAPAN

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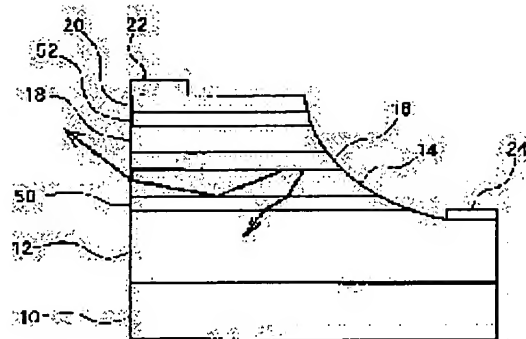
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## (54) GALLIUM-NITRIDE-BASED COMPOUND SEMICONDUCTOR DEVICE

### (57)Abstract:

PROBLEM TO BE SOLVED: To avoid absorption of light in a GaN layer in a light-emitting device using GaN.

SOLUTION: In an UV-LED, on a substrate 10, an n-type GaN layer 12, an AlGaIn cladding layer 14, a GaN light emission layer 16, an AlGaIn cladding layer 18, and a p-type GaN electrode formation layer 20 are successively formed, and a p-type ohmic electrode 22 and an n-type ohmic electrode 24 are formed. Reflection layers 50 and 52 are formed on the interface between the n-type GaN layer 12 and the AlGaIn cladding layer 14, and on the interface between the AlGaIn cladding layer 18 and the p-type GaN electrode formation layer 20 respectively. The refractive index of the reflection layers 50 and 52 is smaller than the clad layers 14 and 18, and light entering at an angle no less than the critical angle is totally reflected for avoiding the absorption of light in the GaN layer.



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